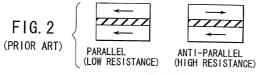
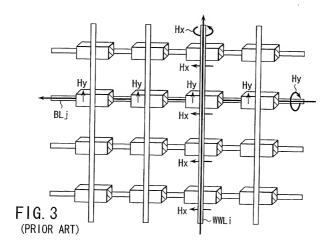
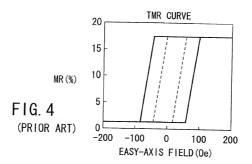


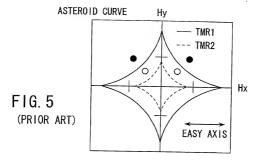
C :TUNNELING BARRIER
D :ANTIFERROMAGNETIC LAYER



TMR EFFECT







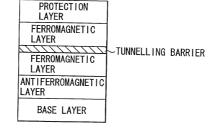
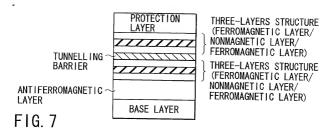
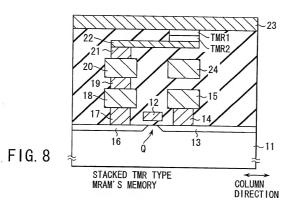
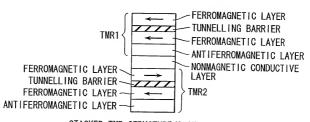


FIG. 6







STACKED TMR STRUCTURE(2 SETS TYPE)

FIG. 9

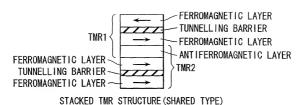


FIG. 10

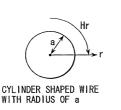
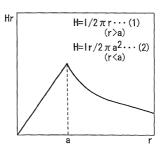
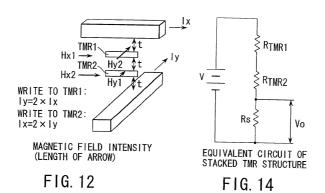


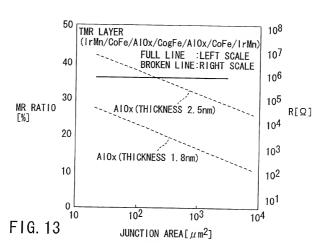
FIG. 11A

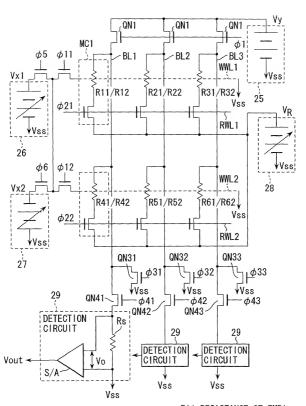


RELATIONSHIP BETWEEN DISTANCE r FROM CENTER OF WIRE AND MAGNETIC FIELD INTENSITY

FIG. 11B







Ril:RESISTANCE OF TMR1 Ril:RESISTANCE OF TMR2 i=1,2...6

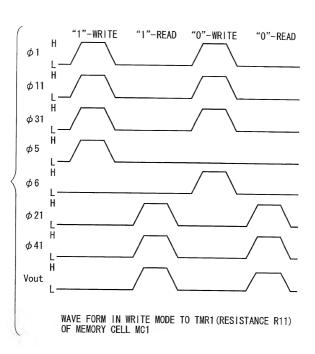


FIG. 16

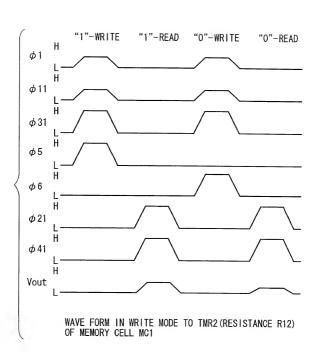
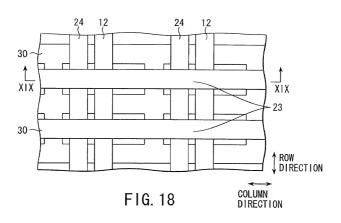
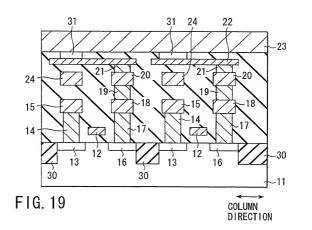
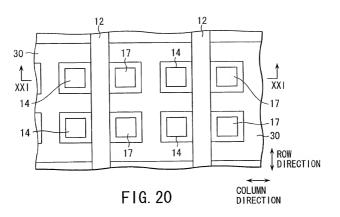


FIG. 17







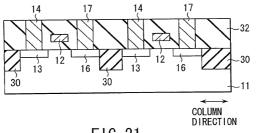
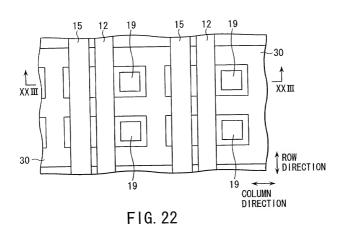


FIG. 21



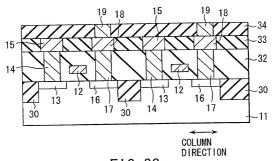


FIG. 23

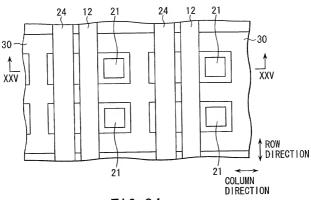


FIG. 24

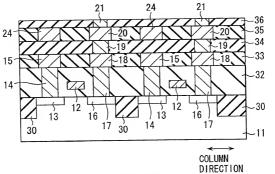


FIG. 25

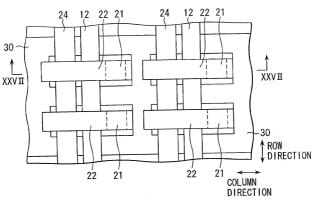


FIG. 26

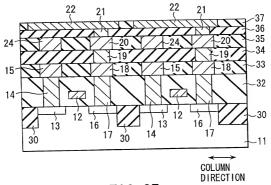


FIG. 27

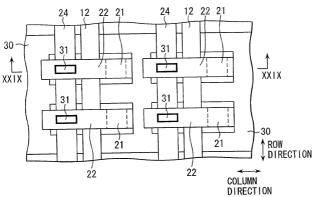


FIG. 28

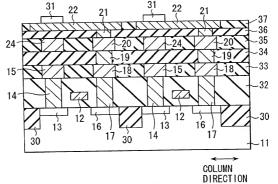


FIG. 29

